

BOOK REVIEWS

A BOTANICAL SURVEY OF THE KEISKAMMAHOEK DISTRICT. By R. Story. Bot. Surv. S. Afr. Mem. 27. 1952. pp. xi & 184. 85 photos, 1 map, 5 graphs. 10s.

So much of the vegetation of the country has undergone or is undergoing change as the result of man's activities that detailed studies of any part are of importance both as a record and still more as a guide to the proper procedures for preservation. This memoir is a case in point. It deals with an area which supports a considerable population and has a vegetation that has undergone a good deal of change but change not yet carried to the extent of obscuring the original relationships. It is an area with considerable diversity in topographic and climatic conditions.

After a rather full account of the climatic conditions, the descriptions of the vegetation are based on the existing communities. While inter-relationships to one another and to habitat are discussed there is no attempt to force any rigid doctrine. For descriptive purposes a primary classification into "woodland" and "grassland" is adopted, a scheme which really does not have much more than its essential simplicity to recommend it. "Woodland" comprises communities with scattered trees or bushes, true forest, and communities composed wholly of bushes. Six types are recognised. Five of these form a series ranging from *Acacia* scrub through different types of more closed scrub to dry and finally moist forest. These correspond to successive zones of increasing altitude and rainfall. The sixth type is the so-called "macchia" which occupies a zone above that of the moist forest, but which is so distinct both in structure and composition that it has to be treated separately throughout. Incidentally it is a little unfortunate that an alien local term be used for vegetation that has little similarity either in habitat or composition with its Mediterranean prototype. Local terms are used for other communities so why not here? The noncommittal "fynbos" is available.

Grassland is divided into "sweetveld" at the lower and drier levels, and "sourveld" at the upper and moister. Each is subdivided.

The treatment of the various types is somewhat unequal. *Acacia* scrub and "macchia" are dealt with in some detail whereas forests are treated much more shortly. In each case the descriptions are followed by a discussion of relationships and problems of usage, preservation and treatment.

The various forest and scrub types are looked on as being true climatic climaxes for the different zones. "Macchia" is also a climax in the zone

above the limits of forest though it is successional to and replaced by forest at lower levels. Within the area grassland is not a true climax though it does become a stable community where local conditions are unfavourable to the full development of the succession. At the higher levels the sourveld is maintained by destructive burning of the "macchia". The mountains here are not of sufficient altitude to reach the zone of mountain grassland. Changes brought about by burning or overgrazing in the various types are discussed together with methods of reclamation or stabilisation.

The whole survey is one that has been carefully worked out and which has yielded results of definite practical importance. The book, is however, not one that is easily read owing to a certain verbosity of style and to the inclusion of a large amount of rather extraneous detail. Editorial pruning would have assisted the average reader. The book is illustrated by no fewer than 85 photographs. These have been carefully selected to illustrate the various points. Unfortunately in many cases the reproduction does little justice to the originals. The vegetation map is on a large scale but owing to a similarity in the symbols used for different communities is not very clear at first glance.

The volume concludes with an alphabetical list of plants, an appendix with some useful hints on the use of meteorological instruments, and a bibliography. The last which extends over five and a half pages has a number of striking omissions and contains a number of items of little obvious value.

R. S. ADAMSON.

SOUTH AFRICAN POLLEN GRAINS AND SPORES. By E. M. Van Zinderen Bakker, Phil. Nat. D. (Amsterdam). Part I. Pp. 72, 16 plates. Published by A. A. Balkema, Amsterdam and Cape Town, 1953. 15s.

The publication of Part I of Dr. Van Zinderen Bakker's work on the pollen grains and spores of South African plants is an event to which local students of palynology have looked forward for some time, as this is likely to be a work of the greatest importance to both taxonomy and pollen analysis in South Africa.

The pollen grains described and figured are arranged according to Engler's system of classification, and Part I includes the Gymnosperms. Monocotyledons and the Dicotyledons up to the family Hydnoraceae. Not all the South African genera are included, but only those which are likely to be of most value to the palynologist interested in pollen analysis or in allergy, and it is to be remarked that some introduced genera, such as *Pandanus*, *Saccharum*, *Casuarina*, *Populus* and *Cannabis* have been for various reasons included.

It is unfortunate that the endemic family Grubbiaceae, as well as the Santalaceae, which ought to be in Part I, have been omitted, but we may hope that this deficiency will be made good in a supplement.

A complete description is given of each grain figured, and in many cases, additional species belonging to the same genus are described, although not figured.

Great precision is given to the author's work by the citation of the herbarium specimens from which the material was taken, and also the herbarium in which the specimens are to be found. Mention is made of the general distribution in South Africa of most of the species described.

The sixteen plates included in this Part are reproductions by photolithography of pencil drawings made by the author, and the figures, almost all drawn from acetolysed material, have a delicate beauty unsurpassed by any figures of pollen which have been published since the copper-plates of Hugo von Mohl's "Pollenkörner" (1834).

A bibliography and a convenient and useful index to all the genera and species described and figured in Part I are included, as well as a glossary of most of the special terms used in the body of the work.

The excellent paper, clear typography and beautiful plates are a credit to the publisher, and all palynologists will eagerly await the four subsequent parts of this useful work.

S. GARSIDE.